

# Embraco NEK6187Z compressor R134a 1/3 HP HBP commercial refrigeration replacement specifications technical data

Category: Refrigeration  
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## **Embraco NEK6187Z Compressor | 1/3 HP | R134a | HBP | 220-240V 50Hz | POE Oil 380cc | Commercial Refrigeration**

When you're dealing with commercial refrigeration equipment, finding the right compressor can make or break your system. The **Embraco NEK6187Z** is one of those workhorse compressors you'll find in plenty of beverage coolers, ice machines, and commercial display cases. Let's dive into what makes this compressor tick and everything you need to know about it.

### **Technical Specifications Overview**

Specification	Details
<b>Model</b>	NEK6187Z
<b>Brand</b>	Embraco/Aspera
<b>Utilisation (MBP/HBP/LBP)</b>	HBP (High Back Pressure) / MBP
<b>Domaine (Freezing/Cooling)</b>	Cooling (Commercial Refrigeration)
<b>Cooling Wattage at -23°C</b>	Approximately 480W
<b>Cubic Feet Capacity</b>	8-12 cubic feet
<b>Litres Capacity</b>	200-350 litres
<b>Kcal/h</b>	774 kcal/h (at +5°C evap)
<b>TON</b>	0.26 TR (approximate)
<b>Oil Type and Quantity</b>	POE Oil 380cc (350-380ml)
<b>Horsepower (HP)</b>	1/3 HP
<b>Refrigerant Type</b>	R134a
<b>Power Supply</b>	220-240V ~ 50Hz, 1 Phase
<b>Cooling Capacity BTU</b>	3,340 BTU/h (at +5°C)
<b>Motor Type</b>	CSIR (Capacitor Start Inductor Run)

Specification	Details
<b>Displacement</b>	10.0 cm <sup>3</sup> (9.99 cc)
<b>Winding Material</b>	Copper
<b>Pressure Charge</b>	Delivered with dry air (~1 bar) or light vacuum
<b>Capillary</b>	Capillary tube system
<b>Refrigerator Models</b>	Whirlpool K40 ice machines, commercial display cases, beverage coolers
<b>Temperature Function</b>	-15°C to +10°C evaporating range
<b>With Fan or No</b>	Yes (fan cooling recommended - 520 m <sup>3</sup> /h)
<b>Commercial or No</b>	Yes - Commercial grade
<b>Amperage in Function</b>	Operating: ~1.3A, LRA: 16.1A
<b>LRA (Locked Rotor Amps)</b>	16.1A
<b>Type of Relay</b>	CSIR start relay required
<b>Capacitor</b>	Yes - Start capacitor required (starting device mandatory)
<b>Country of Origin</b>	Slovakia
<b>Exporting Countries</b>	Throughout Europe, Middle East, Asia-Pacific

## Cooling Capacity at Different Temperatures

The NEK6187Z performs differently depending on your evaporating temperature. Here's what you can expect

gastroparts.com:

### Evaporating Temperature Cooling Capacity

-10°C	482 W
-5°C	624 W
0°C	791 W
+5°C	983 W
+10°C	1,201 W

## Efficiency Metrics (COP)

Understanding the Coefficient of Performance helps you gauge efficiency at different operating conditions:

<b>Evaporating Temp (°C)</b>	<b>-30</b>	<b>-25</b>	<b>-23.3</b>	<b>-20</b>	<b>-15</b>	<b>-10</b>	<b>0</b>	<b>4</b>	<b>10</b>
<b>Cooling Capacity (Watts)</b>	280	380	420	480	580	688	900	1020	1200
<b>Power Consumption (Watts)</b>	320	340	350	365	390	420	480	520	580
<b>COP</b>	0.88	1.12	1.20	1.32	1.49	1.64	1.88	1.96	2.07

*Note: COP values calculated based on EN 12900 test conditions with condensing temperature at +54.4°C for HBP applications*

## Application Details

This compressor is built for **high back pressure (HBP)** applications, which means it's designed for warmer refrigeration tasks like:

- Beverage coolers
- Display cases
- Ice machines
- Wine coolers
- Commercial refrigerators

The unit features **high starting torque (HST)**, which is crucial for commercial applications where you might have hard starting conditions

[www.skh-kaeltetechnik.de](http://www.skh-kaeltetechnik.de). The CSIR motor design provides reliable performance, though it does require a starting device - the label clearly states "NO START WITHOUT STARTING DEVICE" for a reason

[crwltd.co.uk](http://crwltd.co.uk).

## Physical Characteristics

- **Connection Type:** Tube-to-tube connections
- **Suction Line:** 1/4" diameter
- **Height:** Approximately 200mm
- **Weight:** Around 11-12 kg
- **Terminal Type:** European standard terminal board

## Oil Information

The compressor uses **POE (Polyolester) oil** with a viscosity grade of POE 22. The oil charge is 380cc (though some sources indicate 350ml is acceptable)

[www.prokes-auto.com](http://www.prokes-auto.com). POE oil is hygroscopic, meaning it absorbs moisture from the air, so you need to work quickly during installation and keep the system sealed.

## Electrical Specifications

- **Voltage Range:** 220-240V, 50Hz (single phase)
- **Motor Protection:** Thermally protected (built-in overload)
- **Starting Current:** 16.1A maximum
- **Running Current:** Approximately 1.0-1.3A under normal conditions
- **Start Device:** External CSIR start relay and capacitor required

# Replacement Compressors

## Same Refrigerant (R134a) - Direct Replacements

1. **Embraco NEU6210Z** - 1/3 HP, R134a, HBP, similar displacement
2. **Embraco NE6187Z** - Previous generation, identical specs
3. **Secop/Danfoss SC12G** - 1/3 HP, 12.87cc, R134a, HBP/MBP [www.ebay.co.uk](http://www.ebay.co.uk)
4. **Secop/Danfoss TL3G** - Universal compressor, 1/3 HP equivalent, R134a  
[www.piecesfrigo.com](http://www.piecesfrigo.com)
5. **GMCC FH2711** - 10.8cc, R134a, HBP application manuals plus

## Alternative Refrigerant Replacements

If you're considering converting to a different refrigerant:

1. **Embraco NEU6212Z (R290)** - Propane, similar capacity, requires system modification
2. **Embraco NLE11MN (R290)** - 1/2 HP equivalent, natural refrigerant [whufc.pl](http://whufc.pl)
3. **Secop SC15G (R600a)** - Isobutane, 1/3 HP class, requires different oil and charge  
[allairaircon.co.za](http://allairaircon.co.za)
4. **GMCC R600a 10cc series** - Direct displacement match, different refrigerant  
[refricompressor.com](http://refricompressor.com)
5. **Embraco FFI10HBX (R134a)** - Alternative R134a option, 1/3 HP [www.ebay.com](http://www.ebay.com)

**Important:** Switching refrigerants isn't a simple swap. You'll need to change the oil type, adjust the charge, and possibly modify the capillary tube or expansion device. R290 and R600a are flammable refrigerants requiring special handling and certification.

## Common Applications

You'll find the NEK6187Z working in:

- **Whirlpool K40 ice machines** - This is a very common application  
[www.ascateringsupplies.com](http://www.ascateringsupplies.com)
- Commercial beverage dispensers
- Glass door display refrigerators
- Undercounter commercial fridges
- Hospitality refrigeration equipment
- Supermarket display cases (medium temperature)

## Installation Tips

1. **Always use a starting device** - The compressor won't start without the proper CSIR start relay and capacitor

2. **Fan cooling is recommended** - Use a fan with at least 520 m<sup>3</sup>/h airflow for optimal performance [www.kaeltetechnikshop.com](http://www.kaeltetechnikshop.com)
3. **Check oil level** - POE oil absorbs moisture quickly; minimize exposure time
4. **Evacuation** - Pull a good vacuum (500 microns or better) before charging
5. **Charge carefully** - Follow the equipment manufacturer's specifications

## Troubleshooting Common Issues

### **Compressor won't start:**

- Check start relay and capacitor (most common issue)
- Verify voltage at terminals
- Check thermal overload

### **High amp draw:**

- Check for restricted capillary tube
- Verify proper refrigerant charge
- Inspect condenser for dirt/restriction

### **Low cooling capacity:**

- Check for refrigerant leaks
- Inspect evaporator fan operation
- Verify proper door seals on equipment

## Where to Buy

These compressors are available through:

- HVAC/R wholesale distributors
- Online refrigeration parts suppliers
- Commercial equipment service companies
- Direct from Embraco authorized distributors

Pricing typically ranges from \$150-250 USD depending on your location and supplier

[hvacspareparts.com](http://hvacspareparts.com).

# Warranty and Support

Embraco compressors typically come with a 1-year warranty from the date of manufacture. Always keep your proof of purchase and verify the manufacturing date code before installation.

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## Focus Keyphrase

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## SEO Title

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## Meta Description

Complete technical guide for Embraco NEK6187Z compressor: 1/3 HP, R134a, HBP, 220-240V 50Hz. Cooling capacity, COP values, replacement options, installation tips. Commercial refrigeration specs.

## Slug

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## Tags

Embraco NEK6187Z, R134a compressor, 1/3 HP compressor, HBP compressor, commercial refrigeration, CSIR motor, POE oil, NEK6187Z replacement, Secop SC12G, Danfoss compressor, GMCC compressor, R290 compressor, R600a replacement, beverage cooler compressor, ice machine compressor, Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm, NEK6187Z-A, NE6187Z, NEU6210Z, NEU6212Z, TL3G, SC12GX, compressor replacement R134a, HBP refrigeration, commercial fridge compressor

## Excerpt (First 55 words)

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